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Competencies And Learning Outcomes In Architecture Programs

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Abstract

The study aims to analyze the specific competencies and learning outcomes of the Architecture program at the Universidad Francisco de Paula Santander. This process was carried out through a mixed methodological framework with a sequential exploratory design type, through which the regulations and documentation at international, national and institutional levels related to the specific competencies of the discipline of architecture were studied, prioritizing from the international framework the competencies with the highest level of relationship with the academic program, promoting their harmonization with the national and institutional regulations. A consultation instrument was implemented for teachers, graduates and students to assess their level of relationship concerning the curriculum and the pedagogical characteristics of the program, and finally, the specific competencies and learning outcomes were established according to the curricular guidelines of the institution. It was concluded that, at the Latin American level, the specific competencies of the architecture programs are focused on the relevance of the problems of the immediate environment, and that the teachers, students and graduates of the program found a greater relationship with those focused on the exercise of the architectural and/or urban project, as well as with the imaginative, creative, innovative and technological capacities.

Keywords: architecture; higher education; competencies; learning outcomes.

1. Introduction

In Colombia, Law 30 (1992) organizes the public service of Higher Education, describing it in its different articles as follows:

> A permanent process that allows the development of the potentialities of the human being in an integral way (...), Article 2...a cultural public service, inherent to the social purpose of the State (...), Article 4 ....which, without prejudice to the specific purposes of each field of knowledge,

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> shall awaken in students a reflective spirit, aimed at achieving personal autonomy within a framework of freedom of thought and ideological pluralism that considers the universality of knowledge and the particularity of the cultural forms existing in the country (...) and shall be developed within a framework of freedom of teaching, learning, research and professorship.

A permanent process that makes possible the development of the potentialities of the human being in an integral way (...), Article 2...a cultural public service, inherent to the social purpose of the State (...), Article 4 ....which, without prejudice to the specific purposes of each field of knowledge, shall awaken in students a reflective spirit, aimed at achieving personal autonomy within a framework of freedom of thought and ideological pluralism that considers the universality of knowledge and the particularity of the cultural forms existing in the country (...) and shall be developed within a framework of freedom of teaching, learning, research and professorship.

2. Method

The methodological framework of this research responds to the regulations related to the Ministry of Education, as well as institutions and organizations related to the discipline of Architecture in the national and international context; it was developed through a mixed approach through which we proceeded to recognize, analyze and interpret qualitative and quantitative data (Hamui, 2013) with a sequential exploratory design (Canese et al., 2021), a fact that favored the validation and understanding of a complex data that resulted in the understanding of the reality of the competencies approach in Architecture and decision making (Ugalde & Balbastre, 2013) for the specific competencies and learning outcomes of the Architecture program at the Universidad Francisco de Paula Santander (UFPS).

From the qualitative approach, to compile and analyze the competencies defined nationally and internationally for the discipline of Architecture, a documentary search was carried out, organized based on study matrices, which made it possible to identify associations and recurrences for each of the contexts. Then, from the quantitative approach, a survey was developed and applied to the following categories: Teacher, Student and Alumni; to assess using a Likert scale the level of relationship of the specific competencies resulting from the qualitative process for the Educational Project of the Architecture Program of the UFPS. Subsequently, the phase of interpretation and concretion of results and formulation of conclusions was carried out; finally allowing for compliance with the requirements of the Ministry of Education regarding the definition of competencies and learning outcomes in Higher Education Institutions.

3. Results

This research consolidates the results obtained for the process of defining the competencies and learning outcomes of the UFPS Architecture program according to the guidelines established by Decree 1330 (2019) and Resolution 021795 (2020) and the institutional guidelines for the implementation of the curricular policy at the Universidad Francisco de Paula Santander, to establish criteria that guide the curricular update within the academic programs.

To this end, the results are structured based on three aspects of analysis: The first one contemplates the study of the documents that define within the international and national framework the specific competencies for the undergraduate degree in Architecture. Among these are Tunning Project (Vélez, 2013), Saber Pro-ICFES (ICFES, 2021), Resolution 2770 (2003) and the National Qualifications Framework. Catalog of qualifications for the construction sector (Colombian Chamber of Construction, 2020), the generic competencies established by the UFPS, the Institutional Educational Project (UFPS, 2021) and the Educational Project of the Architecture Program (UFPS, 2018).

The second aspect of analysis corresponded to the consultation carried out with teachers, students and graduates, in which the level of relationship of the practical and pedagogical work concerning the results obtained in the first aspect was established. Finally, a triangulation of information was carried out, which allowed the formulation of specific competencies and learning outcomes for the UFPS Architecture Program.

3.1. Basic and general competencies in architecture

For the study and documentary analysis of the specific competencies of the UFPS Architecture Program, the international, national and local scale was considered as a basis for consultation, taking as sources of information documents, books, studies and regulations directly associated with the pedagogical and practical work of Architecture (Table 1).

Table 1. Consultation Documents for Specific Competencies Program of UFPS Architecture

Study Scale	Document
International	Tunning Project (2011-2013)
National	Resolution 2770 (2003)
	Saber Pro-ICFES
	National Qualification Framework
Local	UFPS Institutional Educational Project
	Educational Project of the Architecture Program

The study took the international scale as its main component, taking into account the importance of the internationalization of the curriculum and pedagogical practices to promote the development of competencies on a global scale, which will allow the student of the Architecture program to perform successfully within a globalized and multiculturally diverse framework (Valdés, 2019). In this sense, it is highlighted that within the Tunning Project it was established that Latin American Architecture programs have been consistent and relevant to the needs and problems of their territories; for this reason, the curricula considered, as an articulating element, the subjects called "Design workshop or project design"; through which the direct connection of the theoretical and practical component of the subjects that make up the curricula is allowed (Vélez, 2013).

In the case of the Architecture program at UFPS (2018), the above becomes relevant when taking into account that:

> The Design Workshop (...) beyond a sub-area, is a pedagogical and interdisciplinary strategy that structures the curriculum, strengthens the training purpose and consolidates the research training of the program. The workshop is the center of the professional training and is divided into the whole program in three basic training cycles as follows:
>
> - Basic Cycle. Referring to semesters 1, 2, 3.
> - Professional Cycle. Referred to semesters 4, 5, 6.
> - Cycle of deepening Referred to semesters 7, 8, 9 and 10 (p. 43)
>
> (...) the design workshop, as a guideline of the program, channels all areas of disciplinary knowledge (visual expression, technique, urban planning, design, theory and history) and

> socio-humanistic and research (sociology, ethics, second language, research, statistics), developing creativity, debate, questions, wonder, intuition and the collective construction of knowledge (p. 50).

The Tunning 2011-2013 Educational and Social Innovation project defined 30 specific competencies for Architecture in Latin America, which were taken as a basis or support for study according to their relationship with the geographical context. The review made to this Project allowed the prioritization of four specific competencies (Table 2), under the identification of the level of recurrence and association they presented among them and their relationship with the Institutional Educational Project (UFPS, 2021) and the Educational Project of the Program (UFPS, 2018), where the pedagogical practices and curricular contents that reflect in the Being, Knowing and Know-how, defined in the profile of the Architect of the UFPS (Vélez, 2013) are established (Vélez, 2013).

Table 2. Specific competencies prioritized for the Architecture Program according to the Tunning project.

Tunning Competition Number	Description	Recurrence/Association Level
	Ability to design works of architecture and/or urban planning that integrally satisfy the requirements of human beings, society and its culture, adapting to the context. Imaginative, creative, innovative and leadership skills in the design process of Architecture and Urbanism. Mastery of the means and tools to communicate ideas and projects, both urban and architectural, orally, in writing, graphically and/or volumetrically. Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.	5

Source: Velez, 2013.

As part of the process, an analysis was made of what is described in Article 2 of Resolution 2770 (2003) of the Ministry of Education, which defines the specific quality characteristics for the academic programs of Architecture following the provisions of Decree 2566 (2003), which regulates the minimum quality conditions and other requirements for the offering and development of academic programs of Higher Education. This analysis included the establishment of the level of association to the specific competencies prioritized for the UFPS Architecture Program according to the Tunning project (See Table 3).

Table 3. Association between Resolution 2770 (2003) and the prioritized competencies of Tunning for the UFPS Architecture program.

Resolution 2770 of November 13, 2003		
No Item Res.	Specific Quality Characteristics of Undergraduate Programs in Architecture	Association Prioritized competencies Tunning
Article 2: Curricular Aspects. The program must be consistent with the theoretical, practical and methodological foundations of architecture and with the principles and purposes that guide its formation from an integral perspective, considering, among other aspects, the competencies and knowledge that the Architect is expected to		

possess. Likewise, it must be consistent with the regulations that govern their professional practice in the country.		
1.	Every Professional Architecture Program will strive to:	
1.1	A solid training that guarantees the ability to interpret and solve problems related to the transformation and organization of the physical space, following the socio-cultural and environmental characteristics of the country.	4,21
1.2.	Ethical training within a conception of professional practice based on human, social, cultural and democratic values.	
1.3.	Commitment to a vision of architecture oriented to the resolution of local, regional and national problems, in rural and urban environments.	
1.4.	Responsibility for the architectural and urban heritage, and in general to the cultural and artistic heritage, and the construction of identity paths.	ME (4,21)
1.5.	Scientific training to innovate in the fields of knowledge related to constructive, aesthetic, planned and humanistic systems and approaches.	
1.6.	The culture of interdisciplinary work to interact with professionals from other areas.	
2. The program must ensure the development of cognitive and communicative competencies in the mother tongue and in a second language, as well as the socio-affective competencies necessary for professional practice, as well as the capacities for group and interdisciplinary work, which will allow them to perform in the following fields:		
2.1	Architectural design: This involves the study, elaboration and coordination of architectural projects in different fields and scales. Also includes landscaping projects	4,21
2.2	Management and technological innovation: This involves the management and coordination of the works necessary for the construction of architectural and urban projects in their different constituent aspects. It includes the preparation of budgets, construction scheduling, construction site management and supervision.	ME (4,21)
2.3	Heritage intervention: This involves the valuation, conservation, management and intervention of the national, regional and local urban and architectural heritage.	ME (4,21)
2.4	Urban planning: This involves interdisciplinary work in the definition of territorial and urban planning plans and projects. It also includes urban design projects and urban and territorial landscaping.	
2.5	Public and private management: This involves the performance of public and private administration activities related to the territory, the city and architecture.	4,21
3. For the achievement of the integral formation of the Architect, the basic curriculum shall comprise, as a minimum, the following components of the basic and professional training areas, fundamental areas of knowledge and practice that identify the field of architecture, which should not be understood as a list of subjects:		
3.1	Basic training area: Includes knowledge and practices. necessary for the foundation of the professional field of architecture; it contemplates the following component:	

3.1.1	Component of the theory of architecture and the city: seeks to sensitize the student in the understanding and appreciation of urban and architectural heritage, in its historical and contemporary dimensions. It includes the history and theories of architecture and urban design; it presents close relationships with the history of ideas and art, with cultural and landscape studies, with the paradigms of philosophy, aesthetics and other social developments. It includes training in the knowledge of the laws of culture and the norms concerning heritage in force in the country.	ME (4,21)

3.2 Professional training area: Includes knowledge and practices related to the following components:

3.2.1	Project component: Central axis of the architect's training must be the academic space for the synthesis of the other components of knowledge and practice involved in the architect's training, it must be present at all levels of training throughout the program. It is oriented to form in the student the capacity to synthesize a great variety of cultural, disciplinary, contextual and technological information, using it to support the project. It allows the development of creative and critical thinking, and the necessary design skills for the elaboration of proposals, as well as the necessary communicative competencies for their definition and socialization.	15,4,21
3.2.2	Representation and graphic expression component: Aimed at training students in the skills required for the representation of projects in the different stages of their gestation; in the principles of construction technologies, such as structures, construction, materials, and designs of environments that respond to human needs. Through this component, students should develop skills for the use of tools that allow the representation of three-dimensional spaces. It also requires the use of geometry, drawing and other manual and digital tools that allow them to understand and represent space in design projects that integrate technical, aesthetic and social criteria.	
3.2.3	Technological component: Aimed at training the student in the theories and principles of available technologies; in the properties and meaning of materials and how they influence design; in the criteria for construction management; in the laws and regulations in force in the country related to safety, health and comfort, required in the construction processes and occupation of places. All of the above must be guided by respect for the environment and the promotion of sustainable human development.	
3.2.4	Urban and environmental component: Trains the student in the understanding of the territorial, urban and environmental aspects of the object of professional intervention. It requires an understanding of the interdisciplinary dimension of the problems of the city, the territory and the environment. It trains the student in the formulation of territorial and urban planning plans and projects, as well as urban design and landscaping projects. It includes training in the laws and regulations in force in the country related to the subject.	4,21,9
3.2.5	Professional practice component: Aims to train students in skills for understanding the factors inherent to their professional performance: ethical, social, economic and cultural aspects. It also aims to develop in the student competencies for autonomous and collaborative work in interdisciplinary environments, and project management.	
3.3	Area of Emphasis: The institution may define one or several emphases of	GC, (9)

professional application of the program that allows to attend professional diversification options and satisfy the particular interests of the students.

Paragraph. Each institution shall organize within its curriculum these areas and their components, as well as others it considers pertinent, in correspondence with its mission and institutional project.

* Conventions: N/A Not applicable, ME: Very Specific, GC: Generic Competence.

Skills to design works of architecture and/or urbanism that integrally satisfy the requirements of the human being, society and its culture, adapting to the context. 9. Imaginative, creative, innovative and leadership capacity in the design process of Architecture and Urbanism. 15. Mastery of the means and tools to communicate orally, in writing, graphically and/or volumetrically the ideas and projects, both urban and architectural. 21. Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.

Source: Own elaboration based on Mineducación, 2003.

On the other hand, the Qualification Framework of the Construction sector (Colombian Chamber of Construction, 2020) was reviewed at qualification level 6 in the denomination of Architecture, a project whose purpose is to design the qualifications of the construction sector, taking into account the methodology of the National Qualifications Framework (NQF), establishing a point of articulation between the productive sector and the labor market (Table 4).

Table 4. Association between the Qualification Catalog of the construction sector and the prioritized competencies of the Tunning for the UFPS Architecture program.

No ITEM	Specific competencies Construction industry qualification catalog	Association Prioritized competencies Tunning
CE01.	Formulate construction projects based on client requirements, technical information and associated regulations (Transversal).	4,9
CE02.	Design the architecture of building construction projects based on technical requirements, architectural design principles and associated regulations.	4,21
CE03.	Design the urban planning of construction projects based on identified needs, urban design principles and associated regulations.	4,21
CE04.	Design the landscaping of building and infrastructure construction projects based on landscape design principles, technical information and associated regulations.	4,21
CE05.	Design the interior design of construction projects based on the client's needs, the principles of interior design and the architecture of the site.	ME
CE06.	Develop bioclimatic architecture strategies in building construction projects, following the environmental conditions of the surroundings, sustainability criteria and energy efficiency.	4,21
CE07.	Prepare technical information in proposals for architectural services based on the terms of reference of public or private entities.	ME
CE08.	Restore architectural heritage buildings according to studies and technical criteria.	ME
CE09.	Develop universal design components in the architecture of construction projects according to their characteristics, accessibility criteria and associated regulations.	4,9,21
CE10.	Plan the construction project under the designs, contractual conditions and associated regulations (Transversal).	ME
CE11.	Control the technical-administrative development of the construction work by the schedule, technical specifications and associated regulations (Transversal).	ME
CE12.	Coordinate the activities of completed projects under procedures, maintenance requirements and contractual agreements (Transversal).	ME

CE13.	Manage the quality of virtual models of construction projects according to the execution plan, the phase of the project life cycle and the available technology (Transversal).	9,15
CE14.	Coordinate the specialties in the generation of virtual models of construction projects according to the execution plan, the interrelation of disciplines and the available technology (Transversal).	9,15

* Conventions: N/A Not applicable, ME: Very Specific, GC: Generic Competence.

Note: Prioritized competencies according to Tunning: 4. Ability to design works of architecture and/or urbanism that integrally satisfy the requirements of the human being, society and its culture, adapting to the context. 9. Imaginative, creative, innovative and leadership capacity in the design process of Architecture and Urban Planning. 15. Mastery of the means and tools to communicate orally, in writing, graphically and/or volumetrically the ideas and projects, both urban and architectural. 21. Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.

Source: Own elaboration based on Cámara Colombiana de la Construcción (2020).

Consequently, the Architecture Project Module of the Saber Pro tests (ICFES, 2021) was reviewed, which allows, based on a specific assignment or project, to evaluate processes associated with comprehension, analysis, argumentation and evaluation based on historical-theoretical, technical, spatial and urban components (p. 8) (Table 5).

Table 5. Association between the specific competencies Saber Pro Architecture Project Module and the prioritized competencies of the Tunning for the UFPS Architecture program.

Item	Specific competencies Architecture project module Saber Pro	Association Prioritized competencies Tunning
a. Analyze / Interpret: Interpreting is a process that starts with the analysis of the available information and continues with the management and relationship of the information, linking it to the different project components. Understanding involves identifying the relationships and hierarchies required in the project components.		
Urban-spatial	It understands the relationship between architecture and the city, which satisfies the requirements of human beings, society and its culture by adapting them to the context.	4,21
Urban-spatial	Understands and interprets the legal and technical regulations governing the field of architecture.	4,21,9
Formal -Spatial	Knows spatial elements and structures that concretize in objects the architectural ideas, which are specific to the context in which it will be projected.	4,21,9
Formal -Spatial	Knows the principles of geometry, composition, and visual and spatial perception.	9,15
Technological	Interprets the relationship between materiality and environmental, social and cultural context. Interprets the relationship between environmental preexistences and comfort and bioclimatic conditions.	4,21,9
Functional	It interprets the relationship between architectural themes and the urban environment in terms of processes through which programs and their spaces are understood and characterized. In the test, the student must take into account the contextual preexistences, the demands to be	4,21,9

	met by the project -both the architectural program of functions and areas, as well as the basic regulations-, and the cultural context -reflected in the city selected by the student-.	
b. Conceptualize / Justify-argue: It is about logically and sequentially articulating the architectural ideas in such a way that the rationality of all the project decisions can be appreciated according to clear and current criteria in the development of the proposed project, taking into account the conditions and needs established in the contextual information.		
Urban-Environmental	Interprets urban and architectural spaces that meet the housing needs of human beings.	4,21
Urban-Environmental	Value the natural elements that are part of the context to involve them in architectural and urban projects.	4,21
Urban-Environmental	Interprets urban elements and systems as conditions of architectural design.	
Formal-Spatial	Integrate the knowledge of the models and the spatiality that is generated, so that they contribute to the conceptualization of the proposal.	9,15
Technological	Coordinates, analyzes and synthesizes information from technical processes involved in architectural and urban planning projects.	9,15
Technological	Analyzes inherent and comfortable physical phenomena inherent to architecture to generate spaces.	4,21
Functional	It characterizes and conceptualizes the program with which the project operations of architecture and urban planning are justified.	9,15
Functional	It is expected that in the development of architectural ideas of a complex system. The student resorts to theoretical foundations as design tools, to intervene the physical context, and expose the criteria on which each decision is based in the different components, to form the project as a complex system.	9,15
c. Propose / Develop: Consists of translating the architectural ideas proposed in the conceptualization into architectural codes. Consideration is given to codes of representation -plans, cuts, elevations, axonometrics, perspectives, among others-, spatial codes -of the scale of intervention, proportions, relationships-, technical codes -related to construction systems and materials- and codes of social organization embodied in the proposal made for a specific cultural context.		
Urban-Environmental	It responds with the architectural and urban project to the site conditions, bioclimatic, landscape and topography of each location, according to the region where it is located.	4,21
Urban-Environmental	Develops architectural and urban projects that contemplate sustainability in the environmental, social, cultural and economic fields.	4,21
Formal - Spatial	It proposes the formal structure compatible with the use and context, as well as the spatial sequence and order appropriate to such a formal structure.	4,9,15,21
Technological	Proposes and applies information from technical processes and develops them in architectural and urban projects.	
Technological	Applies and develops the architectural project with technical criteria about the detail and allowing the materialization of the architectural and urbanistic project.	4,21,9
Functional	Coherently integrates and develops the pragmatic relationships that define the themes of architecture and urban planning.	4,9,15,21

Communicative	Converts ideas into codes of representation that respond to the principles of geometry and visual and spatial perception.	
Communicative	Communicates graphically the project through the use of two- and three-dimensional graphic representation techniques.	9, 15
Communicative	Consistently applies the codes of technical drawing in architecture and construction.	

* Conventions: N/A Not applicable, ME: Very Specific, GC: Generic Competence.

Note: Prioritized competencies according to Tunning: 4. Ability to design works of architecture and/or urbanism that integrally satisfy the requirements of human beings, society and its culture, adapting to the context. 9. Imaginative, creative, innovative and leadership capacity in the design process of Architecture and Urbanism. 15. Mastery of the means and tools to communicate orally, in writing, graphically and/or volumetrically the ideas and projects, both urban and architectural. 21. Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.

Source: Own elaboration based on ICFES, 2021.

Finally, the institutional framework of the UFPS was reviewed, specifically referring to the Institutional Educational Project PEI (UFPS, 2021) and the Educational Project of the program PEP (UFPS, 2018), considering the aspects that comply with what is established by the program in its mission and vision, the objectives set, the professional profile of the Architecture Graduate and what refers to compliance with the institutional framework (See Table 6).

Table 6. Association between the Institutional Educational Project PEI. Educational Project PEP Program and the prioritized competencies of Tunning for the UFPS Architecture program.

Item	Institutional Educational Project PEI Educational Project WBS Program	Partnership Prioritized competencies Tunning
UFPS Mission	The Universidad Francisco de Paula Santander is a Public Institution of Higher Education, oriented to continuous improvement and quality in the processes of teaching, research and extension, within the framework of face-to-face, distance and virtual methodological strategies, whose fundamental purpose is the comprehensive training of professionals committed to solving environmental problems, in search of sustainable development of the region.	4,21
UFPS Vision	In the year 2025, we will be a high-quality accredited university, recognized for excellence and efficiency in the exercise of our mission functions with a global focus, placing value on the potential of the university community and participating in the changes of the environment through the transfer of knowledge and innovation, contributing to the sustainable development of society.	4,9,15,21
Challenging objective UFPS	To be recognized nationally as an institution of higher education for the quality in the training of professionals and the commitment to continuous improvement in pursuit of excellence in its teaching, research and social projection processes.	GC

	The undergraduate programs at UFPS allow the development of competencies derived from a process of theoretical and practical learning in a specific area of science. It involves research and permanent interaction with the regional, national and international context to respond accurately to the challenges and programs that arise.	4,21
PEI UFPS	The conception of the pedagogical approach: *Questions as a fundamental pedagogical tool for the development of critical thinking. *The approach of real problems based on students' experiences as active participants of a social group. *Case studies based on the review of the state of the art on problematic issues, inquiry and preparation of the problematic issues of the class, permanent discussions, writing texts, creative proposals, ingenious responses of students to the resolution of critical problems, problem-based teaching (EBP), portfolio methodology, the investigative seminar or German, the use of learning guides.	9,15,4,21
Mission Architecture	The Architecture program trains professionals in various emphases of professional application in a comprehensive manner, emphasizing the generation of knowledge, the transfer of science and technology, seeking the development of human and social qualities to strengthen scientific, creative and investigative concerns, with a constructive critical attitude that allows a professional sensitive to the problems of the environment with a sense of social belonging, for sustainable development.	4,21,9,15
Vision Architecture	The Architecture program will be recognized nationally and internationally for its high academic quality, competitiveness and social relevance, with influence in the decisions committed to the construction of the habitat of the environment; leading the transformation of the territory from creativity, innovation and technological adaptation with ethical sense.	4,21,9,15
Target	To develop in the student a scale of values for peace and inclusion, based on individual and collective esteem, which allows personal and professional development in an ethical, respectful and responsible manner.	GC
	Promote in the student the entrepreneurial and cooperative spirit that allows him/her to meet opportunities with leadership in interdisciplinary teams.	GC
	Promote the production of knowledge from creative and research activities that, through participatory actions, propose relevant solutions to the binational, regional and local context.	4,21,9
	To train integral professional architects with the capacity to propose proposals aimed at improving the quality of life in the different fields of architecture and urban phenomena.	4,21

Professional Profile	From this perspective, the graduate of the Study Plan assumes a suitable professional profile and reflective spirit, assuming in the academy a creative, transformative and investigative attitude that helps to improve the quality of the physical spaces of their environment, by recognizing, understanding and proposing urban-architectural developments in design and materialization in the construction of the social fabric, framing their action in legality.	4,9
	It is a professional who recognizes and disseminates the arts, protects and promotes culture and architectural heritage, stimulating the potential of the human being, solving with intuition and creativity within the principles of plurality and democracy to rationally assume the autonomy and personal growth of the architect as a professional, in contribution with his fellow citizens.	4,9
The UFPS Architect	In his professional work, he creates, from his cultural dimension, dialogue and respect for differences through the critical apprehension of knowledge and the understanding of the social value of knowledge. From his profession, he guides and transforms the scenarios of physical spaces, as well as the architectural and environmental heritage framed in the principles of sustainability and sustainability.	4,21
	An architect who in his theoretical and professional praxis creatively expresses the knowledge of the profession of architecture and recognizes in the historical development of humanity a point of impulse for the educability of man and a tool to understand and solve problems of his environment.	4,21
	That is why they are formed as integral professionals based on valuing ethics in urban and architectural practice as a social responsibility, from self-realization from autonomy or participation in work teams, with an entrepreneurial spirit, with interest in updating and with strengths in communication aimed at progress through technological, human and social development.	4,21,15,9
Graduate Profile - Being	Ethical professional, aware of reality, with social commitment.	4,21
	Professional with the ability to propose solutions for the improvement of the quality of life.	
	Leader of participatory work processes for the management and generation of policies and standards associated with Architecture and Territory.	4,9,21
Graduate Profile-Saber	Understands the Integral Dimension of their discipline.	4,9,15,21
	Understand the Dynamics of the Context in which it develops.	4,21
	Architect with strengths in the technical, technological and administrative management of construction projects.	9,15
	Analyzes and diagnoses the city from its social, political, economic, environmental and physical dimensions, to build arguments to support comprehensive actions in the territory.	

Graduate Profile Do	It frames the practice of architecture and urban interventions in the recognition and application of the normative and legal framework in force.	4,21
	Orients his professional work towards the solution of housing deficiencies in his context.	4,21
	Plans and develops architectural and/or urban projects in its multiple scales for the growth, transformation and conservation of the city.	4,21
	Professional who proposes new constructive, technological and housing alternatives to the reality of their immediate environment.	9,15
	Architect with critical awareness to address architectural intervention, protection and conservation, facilitating dialogue between previous architecture and new proposals.	4,21
PEP	The program is based on strategic guidelines: The formative, which intertwines the conceptual foundations perceptible in the curriculum; architectural design, urban design and construction technology.	4,21,15,9
	Three training cycles: The Basic Cycle (first, second and third semesters), The Professionalization Cycle (fourth, fifth and sixth semesters) and the Deepening Cycle (seventh, eighth, ninth and tenth semesters).	4,21,15,9
	The Study Plan includes subjects distributed among the areas of basic training, professional training, socio-humanistic training and research training. With elective subjects, of which (4) disciplinary and (4) interdisciplinary are required for graduation.	4,21,15,9

* Conventions: N/A Not applicable, ME: Very Specific, GC: Generic Competence.

Note: Prioritized competencies according to Tunning: 4. Ability to design works of architecture and/or urbanism that integrally satisfy the requirements of the human being, society and its culture, adapting to the context. Imaginative, creative, innovative and leadership capacity in the design process of Architecture and Urbanism. 15. Mastery of the means and tools to communicate orally, in writing, graphically and/or volumetrically the ideas and projects, both urban and architectural. 21. Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.

Source: Own elaboration based on ICFES, 2021.

3.2. Assessment of specific competencies in architecture

Once the analysis corresponding to the international, national and institutional framework was developed, with their respective association of the specific competencies presented in each of them for those prioritized for the Architecture program from the Tunning, we proceeded from the quantitative methodological approach to the application of a survey to the Teaching, Student and Alumni estates, which allowed to assess from a Likert scale the level of relationship of the specific competencies prioritized for the program for the educational project of the Architecture program of the UFPS.

The Likert rating scale present in the instrument (See Table 7) corresponded to:

Nothing related.

2. Poorly related.

3. Fairly closely related.

4. Deeply related.

This instrument was applied to a sample corresponding to all the teachers (27) who provide direct service to the Architecture program through the Department of Architecture, Design and Urbanism, in the case of students the sample corresponded to 70 and the graduates of the program, the sample was of 121.

Table 7. Assessment instrument applied to teachers, students and graduates.

Specific Competencies Architecture Program
Institutional Mail:
Name:
1. Ability to design works of architecture and/or urban planning that integrally satisfy the requirements of human beings, society and its culture, adapting to the context.
Nothing Related1234Deeply Related
2. Imaginative, creative, innovative, technological and leadership skills in the design process of architecture and urbanism.
Nothing Related1234 Deeply related
3. Mastery of the means and tools to communicate orally, in writing, graphically (analog-digital) and/or volumetrically the ideas or projects, both urban and architectural.
Nothing Related1234Deeply Related
4. Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.
Nothing Related1234 Deeply related

Source: Own elaboration.

As can be seen in Table 8, the teachers of the Architecture program manifested from their academic work and the development of their pedagogical practices a higher level of relationship corresponding to the prioritized competence number 4 (77.8%), followed by the prioritized competence number 9 (33.3%).

Table 8. Results of teacher evaluation.

#	Prioritized program competencies according to Tunning	1		
	Ability to design works of architecture and/or urban planning that integrally satisfy the requirements of human beings, society and its culture, adapting to the context.	1/27 (3,7%)		21/27 (77,8%)
	Imaginative, creative, innovative, technological and leadership skills in the design process of architecture and urban planning.		9/27 (33,3%)	18/27 (66,7%)
	Mastery of the means and tools to communicate orally, in writing, graphically (analog-digital) and/or volumetrically the ideas or projects, both urban and architectural.	3/27 (11,1%)	8/27 (29,6%)	16/27 (59,3%)
	Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.		8/26 (29,6%)	19/27 (70,4%)

Table 9 shows the results corresponding to the student body, which valued with a higher level of relationship the prioritized competency number 9 (54.3%), followed by the prioritized competency number 4 (51.4%).

Table 9. Results of student assessment.

#	Prioritized program competencies according to Tunning	1

	Ability to design works of architecture and/or urbanism that satisfy integrally the requirements of human beings, society and its culture, adapting to the context.	0	1/70 (1,4%)	36/70 (51,4%)	33/70 (47,1%)
	Imaginative, creative, innovative, technological and leadership skills in the design process of architecture and urban planning.	0	3/70 (4,3%)	29/70 (41,4%)	38/70 (54,3%)
	Mastery of the means and tools to communicate orally, in writing, graphically (analog-digital) and/or volumetrically the ideas or projects, both urban and architectural.	4/70 (5,7%)	7/70 (10%)	25/70 (35,7%)	34/70 (48,6%)
	Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.	0	9/70 (12,9%)	28/70 (40,0%)	33/70 (47,1%)

Source: Own elaboration.

Table 10 shows the results corresponding to the graduates, who valued with a higher level of relationship the prioritized competency number 4 (83%), followed by the prioritized competency number 15 (68%).

Table 10. Results of graduate evaluation.

#	Prioritized program competencies according to Tunning	1			
	Ability to design works of architecture and/or urbanism that satisfy integrally the requirements of human beings, society and its culture, adapting to the context.	0	0	9/121 (17%)	44/121 (83%)
	Imaginative, creative, innovative, technological and leadership skills in the architectural and urban design process.	0	0	28/121 (53%)	25/121 (47%)
	Mastery of the means and tools to communicate orally, in writing, graphically (analog-digital) and/or volumetrically the ideas or projects, both urban and architectural.	0	0	36/121 (68%)	17/121 (32,0%)
	Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.	0	0	10/121 (19%)	43/121 (81%)

Source: Own elaboration.

3.3. Definition of specific competencies for the Architecture program

The generic competencies and learning outcomes adopted by the UFPS are presented below. In this sense, each program of the institution must adopt for its subjects one (1) generic competency with its respective learning outcome, in compliance with the institutional guidelines related to the curricular policy (See Table 11).

Table 11. Results of evaluation of graduates.

Code	Generic Competencies UFPS	Learning outcomes UFPS
CG1. Continuous Reasoning	Solve problems involving quantitative information and mathematical objects in different formats (texts, tables, graphs, charts, diagrams, schemes) that allow a citizen to take an active and informed part in social, cultural, political, administrative, economic, educational	Apply mathematical knowledge and skills in the solution of problem situations that arise in everyday and professional contexts involving quantitative information.

	and labor contexts.	
CG2. Communicative	Communicate effectively in the native language and in a second language with a variety of audiences using diverse media	Demonstrate the skills necessary for lifelong and life-wide learning.
CG3. Citizenship, Ethics and Criticism	To recognize ethics, social responsibility and citizen commitment from a critical and self-critical point of view, assuming their actions as active social subjects of rights, so that they can fully exercise their citizenship, respecting the principles and values built in community, with a sense of justice in the sustainable care of the environment.	Work together and collaboratively with other peers in diverse roles seeking to solve problems in diverse contexts.
CG4. Teamwork	The ability to function effectively in teams whose members collectively provide leadership, create a collaborative and inclusive environment, set goals, plan tasks and accomplish objectives.	Demonstrate ethical behavior in diverse contexts based on universal principles and values, analyzing the different perspectives present in diverse environments where the rights and duties of the citizen are involved.
CG5. Continuous Learning	Demonstrate dynamic actions of constant updating and adaptation to a changing environment, applied to both professional and personal life. It is about being in permanent training.	Effectively use oral and written communication through reports, working papers, presentations, exhibitions or in work meetings. Communicate by means of frequently used and professional expressions in a second language.

Source: Own elaboration.

The definition of the specific competencies was carried out based on the prioritization of the competencies of the Tunnign Project developed in the first part of this research, added to the quantitative assessment developed by teachers, students and graduates of the UFPS Architecture program in harmony with the guiding principles that are part of the UFPS Architecture program (See Table 12).

Table 12. Guiding principles for the Architecture program UFPS

Guiding Principles Architecture Program UFPS	
Aspects of Interest	Prioritized competencies Tunning
The program is based on strategic guidelines: The formative, which intertwines the conceptual foundations perceptible in the curriculum; architectural design, urban design and construction technology.	4,21,15,9
Three training cycles: The Basic Cycle (first, second and third semesters), The Professionalization Cycle (fourth, fifth and sixth semesters) and the Deepening Cycle (seventh, eighth, ninth and tenth semesters).	4,21,15,9
The Study Plan includes subjects distributed among the areas of basic training, professional training, socio-humanistic training and research training. With elective subjects, of which (4) disciplinary and (4) interdisciplinary subjects are required for graduation.	4,21,15,9

* Conventions: N/A Not applicable, ME: Very Specific, GC: Generic Competence.

Note: Prioritized competencies according to Tunning: 4. Ability to design works of architecture and/or urbanism that integrally satisfy the requirements of human beings, society and its culture, adapting to the context. 9. Imaginative, creative, innovative and leadership capacity in the design process of Architecture and Urban Planning. 15. Mastery of the means and tools to communicate orally, in writing, graphically and/or volumetrically the ideas and projects, both urban and architectural. 21. Ability to develop urban architectural projects that guarantee sustainable and environmentally, socially, culturally and economically sustainable development.

Source: Own elaboration.

Taking into account the proximity of the percentage values obtained in the assessment made by the teachers, students and graduates of the architecture program and in compliance with the institutional requirements through which the academic programs were asked to propose two (2) specific competencies, a process of association and integration between the prioritized competencies was carried out, taking into account the type of skills, attitudes and values (UFPS Architect profile) of each one of them. In this way, the two specific competencies of the Architecture program were defined (See Table 13).

Table 13. Specific competencies of the Architecture program UFPS

No	Specific Competencies
CE1	Imaginative, creative, innovative, technological, entrepreneurial and leadership skills to communicate orally, in writing, graphically (analog-digital) and/or volumetrically the design process of architecture and urbanism.
CE2	Ability to design architectural and/or urban planning works that satisfy integrally the requirements of human beings, society and its culture, adapting to the context, guaranteeing sustainable and sustainable development and improving the quality of life in the territory.

Source: Own elaboration.

3.4. Construction of learning outcomes

The UFPS (2022) through the document "Curricular Aspects for the Academic Programs of the UFPS" establishes that the learning outcomes of an academic program must be harmonized with its graduation profile. Among the most representative characteristics of the learning outcomes, it mentions that they must be observable, measurable and, above all, susceptible to evaluation.

> (...) Each learning outcome contained in the Learning Outcome Profile must refer to the domain of knowing, knowing how to do, knowing how to be/to live, or a combination of the three domains or two of them.

Some guiding questions for its formulation:

1. What is the student expected to demonstrate at the end of his or her training cycle at the University?
2. What must the student demonstrations to receive his or her degree?
3. How do those performances serve or are useful for your professional practice (...) (p. 33)?

Within the guidelines, the University established that for the development of the Learning Results (LR), Bloom's Taxonomy should be implemented, taking into account that it favors a reflection on the levels of competence acquired by the students, according to levels of increasing complexity and a cognitive, psychomotor and affective domain (Krathwohl, 2002). The above, so that academic programs can be based on their nature and formative intention, carry out an evaluation process, taking into account elements of the curriculum such as formative activities, evaluation techniques and instruments (Figure 1).

Figure 1: Construction method Learning Outcome

Source: UFPS, 2022.

In this sense, and following the guidelines defined by the institution for the construction of learning outcomes, the study proceeded to define those corresponding to the architecture program (Table 14).

Table 14. Specific competencies and learning outcomes of the UFPS Architecture program.

Code	Specific Competencies	Code	Learning Outcome
CE1	Imaginative, creative, innovative, technological, entrepreneurial and leadership skills to communicate orally, in writing, graphically (analog-digital) and/or volumetrically the design process of architecture and urbanism.	RA1	Communicate orally, in writing, graphically (analog-digital) and/or volumetrically, Architectural or Urban processes and/or projects in their multiple scales, using the Principles, theory and concepts of Architecture for the growth, transformation and conservation of the territory.
CE2	Ability to design architectural and/or urban planning works that fully satisfy the requirements of human beings, society and its culture, adapting to the context, guaranteeing sustainable and sustainable development and improving the quality of life in the territory.	RA2	Design projects, architectural and/or urban planning works that respond to social, cultural, political, economic and environmental dimensions and needs, with arguments that support integral actions in their immediate surroundings and in the territory.

Source: Own elaboration

4. Conclusions

This research condenses the analysis process carried out by the Architecture program, following the parameters established by the Academic Vice-Rectory of the UFPS for the construction of the Specific Competencies of the program and their respective Learning Outcomes. In this sense, the research focused in the first stage on the documentary analysis from the international framework where the discipline of Architecture is reflected, highlighting references such as the Tunning project, and within the national framework other references such as Resolution 2770 (2003) in which the specific quality characteristics of the Architecture program are defined, the national qualification framework, the Saber Pro tests of the ICFES; and institutionally the mission, vision and institutional objectives as well as the mission, vision, professional and graduation profile and the Educational Project of the Architecture program.

From the international (Latin American) point of view, it was found that the specific competencies proposed are associated with the theoretical and practical components aimed at the relevance of the programs for the problems of their immediate environments, highlighting as an articulating element the subjects of Design Workshops. Concerning national regulations, it was found that the Ministry of Education has been in charge of adjusting national regulations, understanding the student as the main and primordial element of the educational process, in addition, it was found that both the international and national perspective presents a synergy aimed at the formation of integral architects relevant to the problems of their immediate environments. In this sense, the UFPS has also directed actions and strategies that allow it to respond to a globalized vision from undergraduate education, where graduates have a successful performance.

For the results obtained in the quantitative phase where a consultation instrument was implemented with teachers, students and graduates of the Architecture program, it should be mentioned that each of the consulted estates evidenced a level of understanding and acceptance for the prioritized competencies, this favored the level of relationship of the competencies for the activities, pedagogical practices of the academic work of the architecture program. It is also highlighted that the competencies with the highest level of relationship corresponded to competency number 4: Ability to project works of architecture and/or urbanism that integrally satisfy the requirements of human beings, society and its culture, adapting to the context, and competency number 9: Imaginative, creative, innovative, technological and leadership capacity in the design process of architecture and urbanism.

The process carried out within this research favored the construction of Specific Competencies and Learning Outcomes that respond to the international and national challenges and requirements, and that are harmonized with both the guidelines and the mission objectives of the institution. It should be noted that the specific competencies and learning outcomes established for the architecture program respond to the strategic guidelines and conceptual foundations that frame the curriculum from the fields of architectural design, urban design and construction technology reflected in the professional work from the practical and theoretical aspects. Likewise, they are immersed in and respond to the training cycles: Basic, professionalization and deepening, and to the basic, professional, socio-humanistic and investigative training axes that determine the graduate profile.

The above shows that UFPS Architecture students present diverse capacities related to oral, written, graphic and volumetric communication from the analog or digital, as well as skills to project architectural and/or urban planning works at various scales in favor of improving the quality of life of the inhabitants and the satisfaction of their requirements, under proposals that provide a comprehensive response to the needs of their immediate environment and promote the improvement of the territory.

References

Cámara Colombiana de la Construcción. (2020). Marco Nacional de Cualificaciones. Catálogo de cualificaciones sector de la construcción. Mineducación. Consultado el 25 de agosto de 2022 en: https://camacol.co/sites/default/files/descargables/Cat%C3%A1logo%20de%20Cualificaciones.pdf

Canese, M. I., Estigarribia, R., Ibarra, G., & Valenzuela, R. (2021). Aplicabilidad del diseño Exploratorio Secuencial para la medición de habilidades cognitivas: una experiencia en la Universidad Nacional de Asunción, Paraguay. Arandu UTIC, 7(2), 63-76.

Congreso de la República de Colombia. (1992, 28 de diciembre). Ley 30 de 1992. Por la cual se organiza el servicio público de la Educación Superior. Diario Oficial n.º 40.700. Consultado el 29 de agosto de 2022 en: http://www.secretariasenado.gov.co/senado/basedoc/ley_0030_1992.html

Consejo Nacional de Educación Superior (1995, 14 de diciembre). Acuerdo 06 de 1995. Por el cual se adoptan las políticas generales de acreditación y se derogan las normas que sean contrarias. Mineducación. Consultado el 15 de agosto de 2022 en: https://www.mineducacion.gov.co/CNA/1741/articles-186370_acuerdo_cesu_0695.pdf

Consejo Nacional de Educación Superior (2020, 01 de julio). Acuerdo 02 de 2020. Por el cual se Actualiza el Modelo de Acreditación en Alta Calidad. Mineducación. Consultado el 30 de agosto de 2022 en: https://www.mineducacion.gov.co/1780/articles-399567_recurso_1.pdf

Hamui-Sutton, A. (2013). Un acercamiento a los métodos mixtos de investigación en educación. Investigación en Educación Médica, 2(8), 211-216.

Instituto Colombiano para la Evaluación de la Educación. (2021, mayo). Guía de orientación Saber Pro. ICFES. Consultado el 17 de Agosto de 2022 en: https://www2.icfes.gov.co/documents/39286/2165188/GDO+Proyecto+de+Arquitectura+Saber+Pro+2021.pdf/f46f1213-f089-9f96-b542-fbd031f30fa2?version=1.0&t=1647753161143

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. Theory into Practice, 41(4), 212–218. DOI: 10.1207/s15430421tip4104_2

Ministerio de Educación Nacional. (2003, 13 de noviembre). Resolución 2770 de 2003. Por la cual se definen las características específicas de calidad para los programas de pregrado en Arquitectura. Consultado el 30 de agosto de 2022 en: https://www.mineducacion.gov.co/1621/articles-86411_Archivo_pdf.pdf

Ministerio de Educación Nacional. (2020, 19 de noviembre). Resolución 021795 de 2020. Por la cual se establecen los parámetros de autoevaluación, verificación y evaluación de las condiciones de calidad de programa reglamentadas en el Decreto número 1075 de 2015, modificado por el Decreto número 1330 de 2019, para la obtención, modificación y renovación del registro calificado. Diario Oficial n.° 51503. Consultado el 30 de agosto de 2022 en: https://www.mineducacion.gov.co/1780/articles-402045_pdf.pdf

Presidencia de la República de Colombia. (2003, 10 de septiembre). Decreto 2566 de 2003. Por el cual se establecen las condiciones mínimas de calidad y demás requisitos para el ofrecimiento y desarrollo de programas académicos de Educacion Superior y se dictan otras disposiciones. Mineducación. Consultado el 01 de septiembre de 2022 en: https://www.mineducacion.gov.co/1621/articles-86425_Archivo_pdf.pdf

Presidente de la República de Colombia. (2019, 25 de julio). Decreto 1330 de 2019. Por el cual se sustituye el Capítulo 2 y se suprime el Capítulo 7 del Título 3 de la Parte 5 del Libro 2 del Decreto 1075 de 2015 -Único Reglamentario del Sector Educación. Mineducación. Consultado el 05 de septiembre de 2022 en: https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=98270

Presidente de la República de Colombia. (2015, 26 de mayo). Decreto 1075 de 2019. Por medio del cual se expide el Decreto Único Reglamentario del Sector Educación. Consultado el 05 de septiembre de 2022 en: https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=77913

Ugalde, N., & Balbastre, F. (2013). Investigación cuantitativa e investigación cualitativa: Buscando las ventajas de las diferentes metodologías de investigación. Ciencias Económicas, 31(2), 179-187.

Universidad Francisco de Paula Santander. (2021, mayo). Acuerdo 021 de 2021. Proyecto Educativo Institucional. UFPS. Consultado el 01 de septiembre de 2022 en: https://ww2.ufps.edu.co/public/archivos/oferta_academica/PEI.pdf

Universidad Francisco de Paula Santander. (2022, 27 de abril). Aspectos Curriculares para los Programas Académicos de la UFPS. Consultado el 05 de septiembre de 2022 en: https://ww2.ufps.edu.co/public/archivos/pdf/8848bec3c7568a70bffdb27d4f88974d.pdf

Universidad Francisco de Paula Santander. (2018). Proyecto Educativo Programa de Arquitectura. UFPS. Consultado el 05 de septiembre de 2022 en: https://ww2.ufps.edu.co/oferta-academica/arquitectura/2412

Valdés, M. (2019). Internacionalización del currículo universitario virtual en el contexto de la globalización. Telos, 21(3), 754-775. DOI: 10.36390/telos213.13

Vélez, S. R. (2013). Tunning América Latina. Educación Superior en América Latina: reflexiones y perspectivas en Arquitectura. Bilbao: Universidad de Deusto.